

CLEAN COPY OF AMENDED CLAIMS

1. A system for downloading firmware from a source module onto a controller of a storage medium with minimal latency of operation comprising:

(a) source means providing SCSI firmware for a disk drive and servo SCSI firmware for positioning said disk drive;

(b) a central processing unit having software programmable selection means for choosing single or dual two-dimensional array means for temporary storing said firmware prior to placement onto a target peripheral controller for said disk drive;

(c) means for temporarily storing different versions of said firmware until said target controller has been accessed to identify the proper version of firmware required;

(d) means for checking the pre-existing firmware in said target controller to determine whether an updated firmware version will be required for a subsequent download.

4. A system for downloading SCSI firmware and SCSI servo firmware in a rapid fashion onto a target control module, said system comprising:

(a) a source means for said SCSI firmware and SCSI servo firmware;

(b) central processing means for receiving said firmware from said source means and utilizing a local memory means for separate storage areas for SCSI firmware and for SCSI servo firmware;

(c) connection means from said local memory means over to a selected one of a plurality of disk drives for temporary storage;

(d) peripheral controller means for loading said SCSI firmware into a first flash PROM and for loading said servo SCSI firmware into a second servo flash PROM;

(e) means to Write said firmware from said first flash and second flash PROMs onto a targeted peripheral controller for a disk unit.

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5. The system of claim 4 wherein said source means includes control data received from the World Wide Web, tape, disk or CD-Rom.

6. The system of claim 4 wherein said central processing means includes:

(b1) means for recognizing the number of bytes of firmware to be downloaded;

(b2) selecting a buffer array size which most closely approximates said recognized number of bytes to be downloaded.

7. The system of claim 4 wherein said central processing means includes:

(b3) inquiry means to said target controller to acquire identification information;

(b4) means to determine, from said identification information, what version of firmware will be downloaded to said target controller.

8. A system for downloading the appropriate SCSI firmware onto a target module controller and overcoming the normal capacity limitations of temporary buffer storage comprising:

(a) source means for providing microcode firmware for a target controller;

(b) processor means having a first and second two-dimensional buffer array means for receiving and buffering said SCSI firmware and SCSI servo firmware destined for said target controller;

(c) means for transferring said SCSI firmware and servo firmware onto a targeted peripheral controller for a disk unit;

(d) a library exported interface (USERMAINTREQUEST) for issuing a download command request and an inquiry command to query the target controller;

(e) means to access the appropriate firmware release numbers and servo release numbers to enable a selection of the appropriately proper firmware;

(f) selection means for selecting the appropriate size of said first and second two-dimensional buffer array means to most efficiently store said selected proper firmware.

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10. The system of claim 8 wherein said inquiry command includes:

(g) means to check the pre-existing firmware in said target controller to determine whether new updated firmware is required.

11. The system of claim 8 which includes means for checking to indicate that the proper firmware has been downloaded to the proper target controller module.

12. A method of selecting and downloading the appropriate SCSI firmware and servo firmware for a selected target control module comprising the steps of:

(a) providing a plurality of separate storage media for holding different versions of SCSI firmware appropriate for different types of target control modules;

(b) utilizing a DFAST utility program for initiating a firmware download to a target control module said DFAST program functioning to download firmware to SCSI devices;

(c) inquiring as to the identity and firmware requirements of a selected target control module;

(d) fetching, by a Central Processing Unit, of the appropriate firmware file from said storage media;

(e) selecting a single or double two-dimensional buffer array in relation to the byte count of said appropriate selected firmware for temporary storage;

(f) downloading the selected firmware onto said target control module.

13. The method of claim 12 wherein step (c) includes the step of:

(c1) checking the pre-existing firmware in said target controller to determine whether or not it requires any updating from the selected firmware on the selected storage media.

14. A system for rapid downloading in one command cycle, of SCSI firmware and servo firmware into a target control module, comprising:

(a) means for initiating a SCSI Inquiry Command to said target control module via a Command Descriptor Block;

(b) means to query a designated target control module with information from a Page Code Field;

(c) means for enabling access to and acquiring a firmware page number and a firmware version number for said target control module;

(d) downloading said SCSI firmware data via selected sizes of two-dimensional buffer arrays;

(e) passing said SCSI firmware data onto said target control module.



15.

The system of claim 14 which includes:

(f) means to sense when said SCSI Inquiry Command initiates an illegal request.